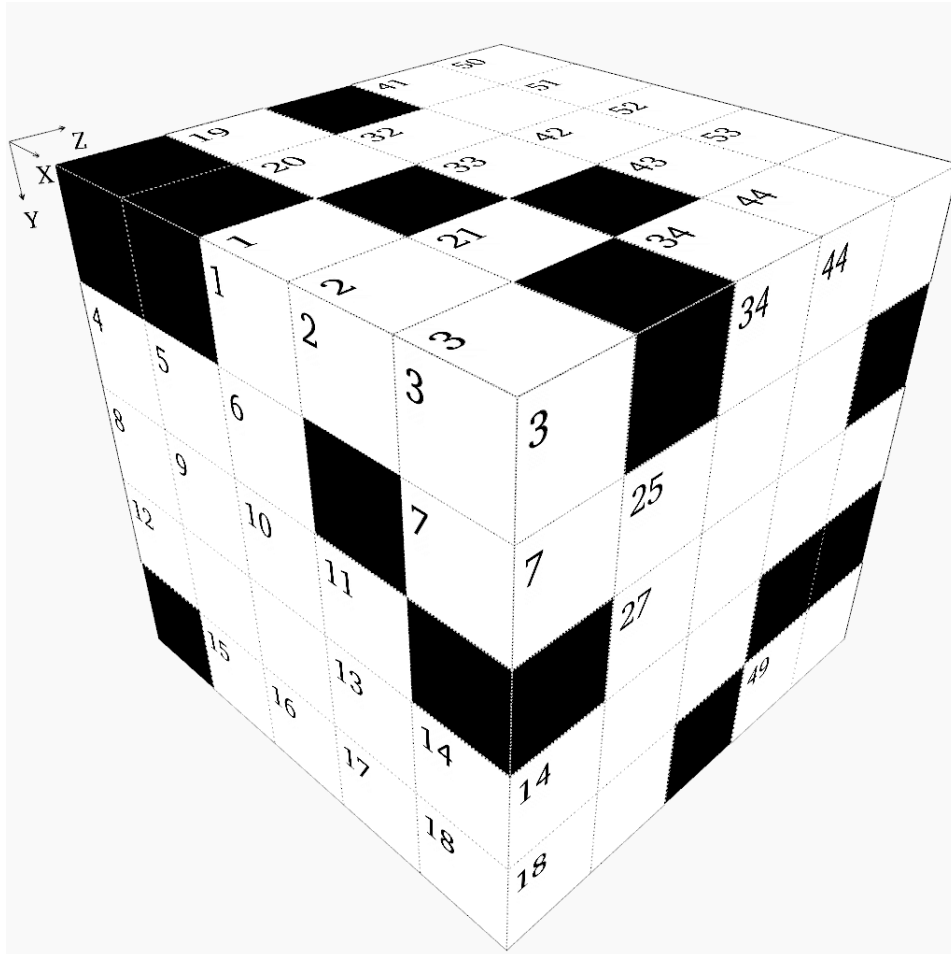


Difficulty: ★★★★★

Cube - Challenging Puzzle #48



This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

Rules:

1. "Words" may not start with a zero.
2. "Words" in the X direction read from left to right.
3. "Words" in the Y direction read from top to bottom.
4. "Words" in the Z direction read from front to back.
5. There is one unique solution which satisfies all the clues given below.
6. Some "words" may not have clues. They will be determined by the "words" which intersect them.

If we take the cube pictured above and divide it into individual X-Y layers, we will get these planes:

		1	2	3	19	20		21			32	33		34
4	5	6		7	22		23	24	25	35			36	
8	9	10	11			26			27	37				
12			13	14	28			29		38		39		
	15	16	17	18	30		31			40				

41		42	43	44	50	51	52	53	
		45			54				
		46			55				
47					56				
		48		49	57				

X Direction

- 1 A square
- 4 X26 minus X1
- 8 One thousand one hundred eleven less than Z11
- 12 Eighty-one times a prime number
- 15 A palindrome
- 19 X37 divided by Z27
- 22 Seventeen times a prime number
- 26 Eleven times a prime number
- 29 Four times Y19
- 31 X38 plus half of Z34
- 32 Z33 divided by fifteen
- 35 First two digits are the same as Y19
- 37 Sixty-two times a square
- 38 Y44 minus Y47
- 40 X56 plus Y41
- 41 X55 plus Y19
- 45 Sixteen times Y36
- 46 X15 plus half of Y47
- 48 All digits are the same
- 50 Forty-eight times a prime number
- 54 Fifteen times a prime number
- 55 Twenty-four times a prime number
- 56 Three times a prime number
- 57 Six thousand four hundred sixty-seven less than Y33

Y Direction

- 1 X48 times Z2
- 3 A square
- 4 Nine times a prime number
- 5 Seventeen times a prime number
- 11 Mean of Y19 and Z5
- 14 X35 divided by Y4
- 19 X48 divided by thirty-seven
- 20 A prime number
- 21 A prime number
- 23 Z14 minus Y36
- 25 X50 minus Y5
- 28 Z34 divided by twenty-one
- 32 Seventy-nine times a prime number
- 33 Ninety-five times a prime number
- 34 Twenty-five times a prime number
- 35 Five times a prime number
- 36 Z43 minus Y19
- 41 Y3 plus Y47
- 42 Mean of X57 and Y28
- 43 Fifteen times Y47
- 44 Half of Y43, then subtract X32
- 47 X1 divided by Y19
- 50 Z6 minus X54
- 51 Last two digits are the same as last two digits of X22
- 52 Twice a prime number
- 53 Forty-eight times a prime number

Z Direction

- 2 Z43 plus Y36
- 4 First three digits are the same as Y4
- 5 Twenty-six times X19
- 6 Forty-nine times a prime number
- 7 Mean of X15 and Z41
- 9 Y21 minus X1
- 10 One thousand ninety more than X37
- 11 Y34 plus Z13
- 12 Fifty-five times a prime number
- 13 X38 minus Y41
- 14 A cube
- 16 A palindrome
- 17 One thousand four hundred ninety-three more than Y21
- 18 X38 minus Z2
- 20 A prime number
- 24 Forty-five times a prime number
- 27 Ninety-three times Z2
- 30 Fifty-eight times Z2
- 33 Twenty-one times a square
- 34 Twelve times Z13
- 39 Mean of X48 and Y28
- 41 X29 plus Y14
- 43 Half of Y41
- 49 Mean of Y3 and X29

Solution:

		5	7	6		1	3		8			3	5		9	
9	3	1		4		8	3	9	2	9		1	8	6	3	9
8	8	9	1				1	5	0	7		9	4	3	0	2
1	5	4	7	1		4			7	2		1	7	3		5
	9	8	8	9		4		6	3	5		5	3	5	5	

9	7	2	4	2		1	3	5	8	4
6		4	8	0		4	6	9	5	
	9	9	0	5		9	7	2	2	4
3		5				5	2	5	9	
2		6	6	6		4	9	8	6	8